

Public summary: 2nd Year Report on NCC-Bulgaria

The goal of the EuroCC project is to provide a coordinated and sustainable high level of expertise in HPC and related technologies across Europe building a network of competence centres in HPC/HPDA/AI. In Bulgaria, the National Competence Centre is built by a consortium, consisting of: Institute of Information and Communication Technologies (leading organization), Sofia University and University of National and World Economy.

The main results by tasks of the NCC Bulgaria, achieved in the period from M13 until the end of the project, can be summarized as follows:

In T3.1 the management and coordination of NCC-Bulgaria was performed. The work has been planned in detail and monitored, including KPIs. The information system of the NCC Bulgaria has been updated periodically. Regular meetings of the NCC management team were organized. The quarterly technical progress and financial reports were prepared and submitted to the project coordinator on time. Coordination of the collaboration activities with other NCCs were especially successful, as well as liaison with big national projects and initiatives.

In T3.2 various trainings, consultations and preparation of training materials were organized to fill gaps in training content and to fulfil the recommendations from the analysis of training surveys, and suggestions from T3.5 (18 events, 400+ participants). Advanced trainings were given in the HPC, HPDA and AI technologies for applications in medicine, biochemistry, computer and natural sciences. Exchange of training materials with other NCCs was carried out. Participation in training workshops, seminars and courses organized by EuroCC/CASTIEL was very useful for NCC Bulgaria.



Figure 1: NCC Bulgaria – NCC UK hybrid workshop “Training and Skills Development”, 18.07.2022, Sofia (photo of f2f participants)

In T3.3 a methodology for protection of intellectual property with regards to technological solutions in the field of HPC/HPDA/AI as inventions and utility models has been developed and disseminated. A specialized patent study of innovative companies in HPC/HPDA/AI has been conducted. A methodology for technology transfer was developed and various events were organized in order to stimulate technology transfer activities. Information about the various

sources of funding available to Bulgarian companies interested in using HPC/HPDA/AI was collected and disseminated. Various meetings and discussions were organized.

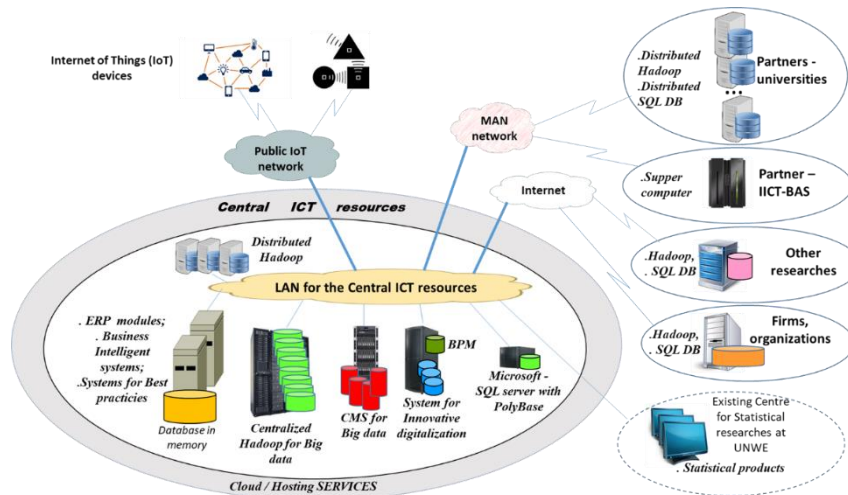


Figure 2: HPDA Architecture at UNWE

In Task 3.4 the collaboration with already identified companies was deepened. Consultations to SMEs for preparation of projects were given. An advising group to facilitate the use of HPC/HPDA/AI services was set up. After identification of the most important system and application services that are needed by SMEs/industry for using HPC/HPDA/AI, a special website with online accessibility tool was open for interested parties from Bulgaria. A big concluding event “NCC Bulgaria Industrial Forum” was organized for SMEs/big industry.

Event	Date, location	Audience
Interactions with HPE and Workshop “New HPC solutions of HPE”, 19 October 2021 (online), 19 October 2021 (online),	19 October 2021 (online), organized by HPE and IICT	30 researchers and 3 SME representatives
Series of meetings with SMEs participated in the DIHs (Trakia, Zagore, Sofia Tech Park) discussing the use of HPC/HPDA/AI technologies, January-February 2022	January, February (F2F)	3 consortia (7 SMEs)
Meetings with IT companies in Bulgaria (VMware, HPE, Risk Electronics, Paraflow)	Regularly (2022)	20 IT experts
Workshop with representatives of the Bulgarian Industrial Association	28 April 2022	5 SME representatives
Workshop with representatives of the start-up company ATOP Ltd	29 April 2022	4 SME representatives

Meeting with representatives of Bulgarian companies - “HPC/HPDA/AI Technologies in Business Solutions”	30 May 2022, UNWE premises	10 IT experts
F2F consultations with Euromed-Sofia Ltd	12 and 19 October	3 SME representatives
Organization of <i>Industry Collaboration Day</i> , 19 July 2022, IICT premises, in the framework of collaboration activities NCC Bulgaria – NCC UK	19 July 2022, F2F	4 SMEs representatives
Conference titled “HPC/HPDA/AI Services for the Business in Bulgaria”	24 November 2022, Sofia	20 IT experts, 15 researchers
Round table “Technology Transfer and business development”	24 November 2022, Sofia	17 IT experts, 15 researchers

Table 1: Joint actions with industrial partners

In T3.5, meetings of the teams with background in various competences were organized to devise measures to improve the weaknesses and leverage the strongest competences of NCC Bulgaria. The online presentation of the competence mapping was activated, allowing access to potential users as well as external experts. The online events organized by CASTIEL were important in order to strengthen the competences for potential synergies with other NCCs. Consultations about availability of competences and related services were performed with representatives of consortia of SMEs, resulting in 8 project proposals, two of them successful so far.

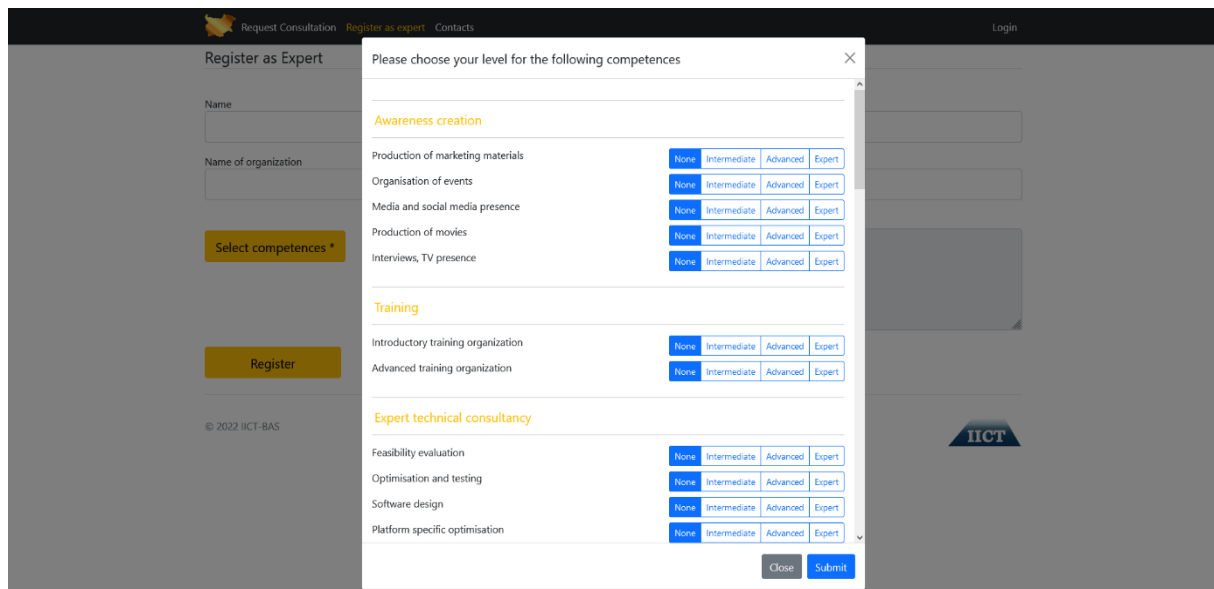


Figure 3: Online tool for requesting access to expertise (screenshot)

In T3.6, the access to available competences and expertise in HPC at the national level was improved through better organization of access to the most used applications and libraries for users and their documentation, extensive repository of code snippets and workflows, pro-active

activities to find new user communities, integration of business models and tools to enable the cooperation with industry. Potential areas of research utilizing the HPC skills of the trained participants (bioinformatics – sequencing, computational chemistry – data management; computation physics – convergence) were identified. Consultations for SMEs on how to do simulation-based prototyping were provided.

In T3.7 the project website, event agenda system, calendar, wiki, social media accounts were maintained. Seven dissemination events were organized by NCC Bulgaria and the project was presented at 11 external events. Eight success stories were prepared and published. A concluding conference “High-performance computing for the benefit of researchers and society” with wide participation from academia, public sector, industry, and including officials from Ministry of Education and Science was held in November.



Figure 1: NCC Bulgaria final conference (hybrid), 21.11.2022, Sofia (photo of f2f participants)

Date	Location	Event	Audience	Type conference /participation
20-23/09/2021	Sofia, Bulgaria	Workshop on Numerical and Symbolic Scientific Computing	Researchers, students	National/ presentation
23/09/2021	Hybrid, Burgas, Bulgaria	12 National Information Day on Open Science	Researchers, students	National/ presentation
24-25/09/2021	Sofia, Bulgaria	European Night of Scientists	Researchers, students	National / 2 presentations, given, booth at fair

2/2/2022	Online Romania	Workshop “Health Innovation powered by High Performance Computing and Artificial Intelligence”	Researchers, students, business representatives	International / 2 presentations
22-24/03/2022	Cité des Sciences et de l'Industrie, La Vilette, Paris, France	EUROHPC Summit Week 2022	Researchers, business representatives, representatives of Research infrastructures	International
6-9/04/2022	Hybrid, Tryavna, Bulgaria	51st Spring Conference of the Union of Mathematicians April 6-9, 2022	Researchers, end-users	National/ presentation, distributing materials
5-8/06/2022	Plovdiv, Bulgaria	International defence equipment and services exhibition, “HEMUS 2022”	Stakeholders, researchers	International/ distributing materials
5-10/06/2022	Sozopol, Bulgaria	International workshop “Numerical Solution of Fractional Differential Equations and Applications”	Researchers, end-users	International/ presentation, distributing materials
14/06/2022	Bucharest	HPC day within CIP Forum V 2022	Researchers, industry representatives	NCC Bulgaria presentation, panel discussion
22-27/06/2022	Hybrid: Albena, Bulgaria	14th Conference of the Euro-American Consortium for Promoting the Application of Mathematics in Technical and Natural Sciences,	Researchers, end-users	International/ distributing materials
6-9/09/2022	Budva, Montenegro	EuroCC/CASTIEL Conference	Researchers, experts	International
23-25/09/2022	Hybrid: Burgas, Bulgaria	Hybrid International Conference “Digital Presentation and Preservation of Cultural and Scientific Heritage” (DIPP22), 23-25 Sept. Burgas, Bulgaria.	Researchers, business representatives, end-users	International/ presentation, distributing materials

Table 2: Main national/international events where NCC Bulgaria has been presented

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